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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,517	10/07/2003	Yasufumi Takagi	046124-5240	8426

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EXAMINER

QUASH, ANTHONY G

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/679,517

Applicant(s)

TAKAGI ET AL.

Examiner

Anthony Quash

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/15/05 (RCE).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo [WO 02/061458] in view of Tsuda [6,399,966]. As per claims 1,8, Kondo [WO 02/061458] teaches an entrance surface for taking the incident electrons into the illuminant, an emitting surface for outputting at least part of the fluorescence converted from the incident electrons in the illuminant, the emitting surface opposing the entrance surface, a substrate being transparent with respect to the fluorescence, and having a first surface and a second surface that opposes the first surface and that corresponds to the emitting surface, and a nitride semiconductor layer provided on one surface of the substrate, for emitting fluorescence in response to the electron incidence. In addition, Kondo [WO 02/061458] teaches that the nitride layer covers the entire surface of the substrate. See Kondo [WO 02/061458] abstract, figs. 1, 7,9-13, p. 1 line 10 – p. 3 line 25, p. 4 line 15 – p. 9 line 25, p 11 line 20 – p. 12 line 15, p. 13 lines 1– 17, p. 14 lines 10-23, p. 17 lines 6-8, p. 19 lines 17-20, 25 – p. 20 line 18, p. 28 lines 2-10, p. 29 lines 15-25. (For an English equivalent applicant is directed to see Kondo [2004/0061054] abstract, figs. 1, 7,9-13, paragraphs [0003, 0005-0014, 0016-0025, 0045-0047, 0051-0055, 0059, 0078-0082, and 0136].) However, Kondo [WO 02/061458] does not explicitly state that nitride layer having a quantum well structure. Tsuda [6,399,966]

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does teach the nitride layer having a quantum well structure. See Tsuda [6,399,966] abstract, figs. 1,8, col. 2 lines 8-67, col. 3 lines 45-55, col. 4 lines 5-25, col. 7 lines 30-40, column 10, col. 11 lines 20-24, col. 13 lines 5-20, col. 16 lines 10-67, col. 17 lines 15-20, 55-67, col. 18 lines 29-45, col. 20 lines 30-35, col. 21 lines 15-30,55-65, and col. 24 lines 30-45. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the nitride layer contain a quantum well structure in order to allow a higher luminous efficacy as taught in Tsuda [6,399,966].

As per claim 2, Tsuda [6,399,966] discloses the well width of the quantum well structure being 4nm or less. See Tsuda [6,399,966] col. 11 lines 20-24, and col. 21 lines 55-60.

As per claim 3, Kondo [WO 02/061458] teaches a photo-detector having sensitivity for fluorescence emitted from the illuminant. See Kondo [WO 02/061458] abstract.

As per claim 4, Kondo [WO 02/061458] teaches a photo-detector having a sensitivity with respect to fluorescence emitted from the illuminant, and a vacuum chamber including at least the illuminant installed inside, wherein the scanning electron microscope guides secondary electrons, which are generated from a sample disposed inside the vacuum chamber by scanning the surface of the sample with an electron beam, to the electron beam detector, and taking an image of the sample by making correspondence between the scanning position of the sample and the output of the electron beam detector. See Kondo [WO 02/061458] abstract, figs. 1, 7,9-13, p. 1 line

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10 – p. 3 line 25, p. 4 line 15 – p. 9 line 25, p. 11 line 20 – p. 12 line 15, p. 13 lines 1–17, p. 14 lines 10-23, p. 17 lines 6-8, p. 19 lines 17-20, 25 – p. 20 line 18, p. 28 lines 2-10, p. 29 lines 15-25. (For an English equivalent, the applicant is directed to see Kondo [2004/0061054] abstract, figs. 1, 7, 9-13, paragraphs [0003, 0005-0014, 0016-0025, 0045-0047, 0051-0055, 0059, 0078-0082, and 0136].)

As per claim 5, Tsuda [6,399,966] discloses the well width of the quantum well structure being 4nm or less. See Tsuda [6,399,966] col. 11 lines 20-24, and col. 21 lines 55-60.

As per claim 6, Kondo [WO 02/061458] teaches an electron beam detector including an illuminant, and a photo-detector having a sensitivity for fluorescence emitted from the illuminant, a vacuum chamber, including at least the illuminant installed inside, a separating section which spatially or temporally separates ions generated from a sample inside the vacuum chamber in accordance with masses of the ions, and a dynode to be irradiated with ions that have been separated at the separation section, wherein the secondary electrons, which are generated from the dynode in accordance with the incidence of ions onto the dynode, are guided to the electron beam detector and mass spectroscopy of the sample is carried out based on the output of the electron beam detector. See Kondo [WO 02/061458] abstract, figs. 1, 7, 9-13, p. 1 line 10 – p. 3 line 25, p. 4 line 15 – p. 9 line 25, p. 11 line 20 – p. 12 line 15, p. 13 lines 1–17, p. 14 lines 10-23, p. 17 lines 6-8, p. 19 lines 17-20, 25 – p. 20 line 18, p. 28 lines 2-10, p. 29 lines 15-25. (For an English equivalent applicant is directed to see Kondo

[2004/0061054] abstract, figs. 1, 7, 9-13, paragraphs [0003, 0005-0014, 0016-0025, 0045-0047, 0051-0055, 0059, 0078-0082, and 0136].)

As per claim 7, Tsuda [6,399,966] discloses the well width of the quantum well structure being 4nm or less. See Tsuda [6,399,966] col. 11 lines 20-24, and col. 21 lines 55-60.

Response to Arguments

With respect to applicant's arguments concerning the Kondo [2004/0061054] reference, this document is now merely used to provide an English equivalent to PCT to Kondo [WO 02/061458], which was provide in applicant's disclosure. This document, Kondo [WO 02/061458], qualifies as prior art under 102 (a), which states "the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent." In this case, the document was published by others, on 8/8/2002, which is before applicant's priority date and therefore qualifies as prior art. Therefore, since the rejection is based upon Kondo [WO 02/061458], applicant's arguments with respect to Kondo [2004/0061054] are mute in view of new grounds for rejection. Should applicant dispute the use of Kondo [2004/0061054] as an English equivalent, applicant is welcomed to provide an English translation of PCT to Kondo [WO 02/061458] in its response to this office action.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,580,215 to Nihashi is considered pertinent to the applicant's disclosure due to its discussion on a substrate being covered with nitride material and fluorescence material. See Nihashi [6,580,215] col. 4 lines 55-67.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Quash whose telephone number is (571)-272-2480. The examiner can normally be reached on Monday thru Friday 9 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571)-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. Quash
a.q.
6/19/05


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